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Fig. 14 shows an example of alignment of a 4-byte unaligned store instruction in different Endianness;

Fig. 15 illustrates a simplified block diagram of the Sign selection block 680 of the present invention;

Fig. 16 illustrates a simplified block diagram of the Sign (zero) Extension Block 690 of the present invention.

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IN THE CLAIMS:

Please cancel claim 5 without prejudice; amend claims 1, 2, 7, 11, and 12; and add new claim 13 as follows. The remaining claims are unamended, but are reproduced below for the Examiner's convenience and reference.

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1. (Amended) A method for loading unaligned data stored in a plurality of memory locations, comprising:
    - providing a first instruction causing loading of a first part of said unaligned data into a first storage location by using a first pointer giving a memory address of a first position;
    - rotating and masking said first part of said unaligned data in said first storage location from a first position to a second position;
    - providing a second instruction causing loading of a second part of said unaligned data into a second storage location by using a second pointer giving a memory address of a fourth position;
    - rotating and masking said second part of said unaligned data in said second storage location from a third position to a fourth position; and
    - providing a third instruction causing combining of said first storage location with said second location using a logical operation into a result storage location.
  2. (Amended) The method of claim 1 wherein said first pointer is a first register, said first storage location is a second register, said second pointer is a third register, and said second storage location is a fourth register, and said result storage location is a result register.

3. The method of claim 2 wherein said registers are 64-bits in length.

4. The method of claim 1 wherein the logical operation is a bit-wise OR operation.

5. CANCELED.

6. The method of claim 1 wherein said rotating is performed in two phases comprising a first phase in which a major rotation is performed and a second phase in which a minor rotation is performed.

7. (Amended) A method for storing data into an unaligned plurality of memory locations, comprising:

providing a first instruction causing rotation of data in a first storage location and storing of a first part of said data in a first portion of unaligned plurality of memory locations from a first position to a second position;

having a first pointer giving an address of a first position;

providing a second instruction causing rotation of data in a second storage location and storing of a second part of said data in a second portion of unaligned plurality of memory locations from a third position to a fourth position; and

having a second pointer giving an address of a fourth position.

8. The method of claim 7 wherein said first pointer comprises a high address and said second pointer comprises a low address.

9. The method of claim 8 wherein said data is stored in said unaligned plurality of memory locations inclusively between said high address and said low address.

10. The method of claim 7 wherein said rotating is performed in two phases comprising a first phase in which a major rotation is performed and a second phase in which a minor rotation is performed.

11. (Amended) The method of claim 7 wherein said first storage location is a first register, said first pointer is a second register, and said second pointer is a third register.

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